UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,764	07/09/2003	Heiko Mauersberger	016072-001300US	2287

20350 7590 12/19/2007

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
DALEY, CHRISTOPHER ANTHONY	
ART UNIT	**PAPER NUMBER**
2111	

MAIL DATE	DELIVERY MODE
12/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/616,764	MAUERSBERGER ET AL.	
	Examiner	Art Unit	
	Christopher A. Daley	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 2, 7 – 13 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US6820158) hereinafter Lee in view of Kaganoi (US6772269), and further in view of Vanbrabant (US4679192).

2. As to claims 1 and 13, Lee discloses A device for data communication between a first host device or a further host device and at least one client device on a shared transmission path having: a first host device, which includes a host application (Figure 1 illustrates a system 100 comprising a plurality of processors 102 – 108, coupled in a ring configuration to system address chip 130, and system data chip 140 via bus 110 and 114. Said system data chip 140, comprises the application to manage the system the system data flow, COL. 4, lines 1 – 20, COL. 4, line 53 – COL. 6, line 5);
at least one further host device, which includes a host application (Figure 1 illustrates a second host device system address chip 130, which manages the system address scheme, COL. 4, lines 15 – 20);

at least one client device, which includes a client application (Figure 1 illustrates a plurality of client devices such as MAC, 156, and MDC 158, COL. 4, lines 5 – 10);

wherein the host devices each have a master application interface module which is linked in the transmission path :the host devices each have a master application module which connects the particular host application to the assigned master application interface module (Figure 5A illustrates the details of said interface module, COL. 6, lines 26 – 31);

each client device has a client application interface module, which is linked in the transmission path and is connected to the assigned client application:

a bus control module is provided (Figure 5A illustrates the details of said interface module, COL. 6, lines 26 – 31);

the transmission path is implemented as a data bus representing a ring connector (Figure 4B illustrates an embodiment of the associated devices coupled together in a ring configuration COL. 5, lines 40 – 56);

the respective master application interface module of each host device and the respective client application interface module of each client device, as well as the bus control module are connected to one another by the data bus for exchanging data and/or signals with one another and the bus control module being implemented to control the access of the host devices to the data bus ((Figure 5A illustrates the details of both master and client interfaces showing the interface logic 510, and the control logic 520, COL. 6, lines 26 – 42);

Lee does not explicitly disclose a bus control module.

However, Kaganoi teaches of a bus control module in the embodiment of a bridge device as illustrated in Figure 3. Said figure illustrates a bridge such as 4A that controls the data flow from a plurality of adapters such as 12a, 12b, and 12c. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the bus switch bridge in the system of Lee to increase the transfer bandwidth of the sources, COL. 3, 1 – 3. One of ordinary skill in the art would have been motivated to use the bus switch bridge in the system of Lee to increase the transfer bandwidth of the sources, COL. 3, 1 – 3.

The bus control module is provided in the ring structure of the data bus and is connected to the respective master application interface module of each of the host device and the respective client application interface module of each client device by the data bus for the exchanging data and /or signals with one another (Said module such as element 13 of Figure 12 illustrates controller coupled to a plurality of adapters for both the master and client interfaces, COL. 14, lines 34 – 65; and

Wherein in the case of a blocked data bus, the bus control module transmits a new arbitration frame having a deactivated activity bit in order to release the blocked data bus (Figure 2 illustrates a data selection logic that allows the existing ring data to be circulated or data from the new module maybe enabled to be inserted onto said ring, COL. 2, lines 20 – 50.

Lee as modified by Kaganoi does not explicitly disclose the bus control module is provided with a counter, which counts the pulses between the passage of two arbitration frames relayed on the data bus.

However, Vanbrabant teaches the bus control module is provided with a counter, which counts the pulses between the passages of two arbitration frames relayed on the data bus. Figure 2 illustrates a module comprising of a counter, a comparator, and an address register that controls the transaction of data from one station to another as shown in Figure 1. Each station has a unique address and clock signature that allows communication between said stations within set arbitrated frames, COL. 2, lines 19 - 65. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the counter of Vanbrabant in the system of Lee/Kaganoi to be able to determine the duration needed to transfer the data packets during access time, COL. 1, lines 20 - 46. One of ordinary skill in the art would have been motivated to use the counter of Vanbrabant in the system of Lee/Kaganoi to be able to determine the duration needed to transfer the data packets during access time, COL. 1, lines 55 – 65.

Vanbrabant teaches when the number of said elapsed pulses exceeds said predetermined target number, the bus control module transmits a new arbitration frame having a deactivated activity bit in order to release the blocked data bus (The enable bit signal provides said feature, COL. 2, line 60 – COL. 3, line 15).

3. As to claim 7, Lee discloses a method of data communication between a first host device or a further host device and at least one client device on a shared

transmission path implemented as a data bus representing a ring connection, having the following steps:

opening a communication connection between a host application running on the host device and a client application running on the client device (Figure 8 illustrates the opening of the host device to a client device via the control logic 700, COL. 9, lines 33 – 50);

transmitting arbitration information on the data bus along the opened communication connection, the arbitration information containing data, on the basis of which the data bus is reserved for a predetermined time interval or for a predetermined data volume for a subsequent data transmission on the data bus along the opened communication connection (Figure 4B illustrates the topology of the coupling of the host devices, client devices, and arbiter. Arbiter ARB of said figure using the interface module as shown in Figure 8, COL. 5, lines 40 – 56);

transmitting data and/or signals between the host application and the client application and/or between the client application in and the host application on the data bus along the opened communication connection (Figure 7 illustrates the data transmission , COL 9, lines 35 – 50);

Vanbrabant teaches wherein the passage of an arbitration frame containing the arbitration information on the data bus is monitored by a bus control module in such a way that the pulses between two passages of the arbitration are counted and wherein a new arbitration frame having a deactivated bit is transmitted by the control module when

the number of counted pulses exceeds a predetermined value (The enable bit signal provides said feature, COL. 2, line 60 – COL. 3, line 15).

4. As to claim 8, Lee discloses the method, wherein the arbitration information is transmitted as an arbitration block, an arbitration block having arbitration data which includes information about the length of the predetermined time interval or about the extent of the predetermined data volume for the subsequent data transmission (It is well known in the art that the arbitration scheme provides said features).

5. As to claim 9, Lee discloses the method, wherein the arbitration block has activity data, which includes information about the current state of the transmission path, from which it may be concluded whether the transmission path is currently being used for data transmission (It is well known in the art that the arbitration scheme provides said features).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Kaganoi, in further view of Vanbrabant, and further in view of Chang et al (US4662232) hereinafter Chang.

7. As to claim 2, Lee does not explicitly disclose the device, wherein the host applications of the first and /or the further host devices have a processor.

However, Chang teaches in figure 2 of a device, host processor system comprising host CPU 31. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the processor of Chang in the system of Lee/Kaganoi/Vanbrabant as it offers a CPU that may be used in the host and the adapter that is relatively cheap, COL. 1, lines 38 - 56. One of ordinary skill in the art would have been motivated to use the processor of Chang in the system of Lee/Kaganoi/Vanbrabant as it offers a CPU that may be used in the host and the adapter that is relatively cheap, COL. 1, lines 38 - 56.

8. Claims 10 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Kaganoi, in further view of Vanbrabant, and further in view of Chang and in further view of Jhang et al (US6253292), hereinafter Jhang.

9. As to claim 10, Lee as modified by Kaganoi/Vanbrabant/Chang do not explicitly disclose the method, wherein in the event of an access wish of a host application to the transmission path, the master application interface module assigned to the host application, accepts following steps are performed:
the arbitration block present on the transmission path, reads out the activity data, checks, on the basis of the activity data, whether the transmission path is currently free for data transmission, writes, if the transmission path is free, activity data in the arbitration block which indicates use of the transmission path by the host application, and transfers the arbitration block to the bus control module via the transmission path;

upon which the bus control module reserves the transmission path for the access by the host application.

However, Jhang teaches the arbitration block present on the transmission path, reads out the activity data, checks, on the basis of the activity data, whether the transmission path is currently free for data transmission, writes, if the transmission path is free, activity data in the arbitration block which indicates use of the transmission path by the host application, and transfers the arbitration block to the bus control module via the transmission path (Figure 4B illustrates a system comprising of an arbiter, node controller 416 coupled to host 412, and transmission path that couples arbiter to the ring interface via interface 418);

upon which the bus control module reserves the transmission path for the access by the host application (Said node controller 416 also comprises the module that enable the transmission of data from host 412 to the ring interface , COL. 4, lines 54 – 65). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the controller of Jhang in the system of Lee/King to manage the ring flow of a multi-processor system in a ring bus architecture as its snooping scheme allows for efficient use of this bus structure, COL. 3, lines 15 – 23. One of ordinary skill in the art would have been motivated to use the controller of Jhang in the system of Lee/King to manage the ring flow of a multi-processor system in a ring bus architecture as its snooping scheme allows for efficient use of this bus structure, COL. 3, lines 15 – 23.

10. As to claim 11, Jhang discloses the method, wherein after termination of a data transmission, the activity data in the arbitration block is reset by the master application interface module and the transmission path, is thus released again (Node controller 416 manages the requests for the ring interface from the plurality of processors, and releases the transmission path to other processors after the transmission is completed, Col. 4, lines 37 – 45).

11. As to claim 12, Lee discloses a method of data communication in a device for data communication between a first host device or a further host device and at least one client device on a shared transmission path implemented as a data bus representing a ring connection, comprising:

opening a communication connection between a host application running on the host device and a client application running on the client device (Figure 8 illustrates the opening of the host device to a client device via the control logic 700, COL. 9, lines 33 – 50);

transmitting arbitration information on the data bus along the opened communication connection, the arbitration information containing data, on the basis of which the data bus is reserved for a predetermined time interval or for a predetermined data volume for a subsequent data transmission on the data bus along the opened communication connection (Figure 4B illustrates the topology of the coupling of the host devices, client devices, and arbiter. Arbiter ARB of said figure using the interface module as shown in Figure 8, COL. 5, lines 40 – 56);

transmitting data and/or signals between the host application and the client

application and/or between the client application in and the host application on the data bus along the opened communication connection (Figure 7 illustrates the data transmission , COL 9, lines 35 – 50).

Jhang teaches wherein in the event of an access wish of a host application to the transmission path, the following steps are performed:

the master application interface module assigned to the host application

accepts the arbitration block present on the transmission path, reads out activity data from the arbitration block, checks, on the basis of the activity data, whether the transmission path is currently free for data transmission, writes, if the transmission path is free, activity data in the arbitration block which indicates use of the transmission path b# the host application, and transfers the arbitration block to the bus control module via the transmission path (Figure 4B illustrates a system comprising of an arbiter, node controller 416 coupled to host 412, and transmission path that couples arbiter to the ring interface via interface 418);

upon which the bus control module reserves the transmission path for the access by the host application (Said node controller 416 also comprises the module that enable the transmission of data from host 412 to the ring interface , COL. 4, lines 54 – 65).

Vanbrabant teaches wherein the passage of an arbitration frame containing the arbitration information on the data bus is monitored by a bus control module in such a way that the pulses between two passages of the arbitration are counted and wherein a new arbitration frame having a deactivated bit is transmitted by the control module when

the number of counted pulses exceeds a predetermined value (The enable bit signal provides said feature, COL. 2, line 60 – COL. 3, line 15).

Response to Arguments

12. Applicant's arguments with respect to claims 1 and 13 have been considered but are moot in view of the new ground(s) of rejection. With regards to the applicant's argument that prior art does not disclose the bus control module is provided with a counter, which counts the pulses between the passage of two arbitration frames relayed on the data bus.

However, Vanbrabant teaches the bus control module is provided with a counter, which counts the pulses between the passage of two arbitration frames relayed on the data bus. Figure 3 illustrates a module comprising of a counter 302 that generates a signals that measures the duration of the number of time slots for bus access, COL. 4, lines 51 – 65. Thus applicant's argument is not considered persuasive twoards patentability.

With regards to the applicant's argument that prior art does not teach wherein the passage of an arbitration frame containing the arbitration information on the data bus is monitored by a bus control module in such a way that the pulses between two passages of the arbitration are counted and wherein a new arbitration frame having a deactivated bit is transmitted by the control module when the number of counted pulses exceeds a predetermined value.

However, Vanbrabant teaches wherein the passage of an arbitration frame containing the arbitration information on the data bus is monitored by a bus control module in such a way that the pulses between two passages of the arbitration are counted and wherein a new arbitration frame having a deactivated bit is transmitted by the control module when the number of counted pulses exceeds a predetermined value (The enable bit signal provides said feature, COL. 2, line 60 – COL. 3, line 15). Therefore, applicant's argument is not considered persuasive.

Conclusion

13. Accordingly, **THIS ACTION IS non-final**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this non-final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this non-final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Daley whose telephone number is 571 272 3625. The examiner can normally be reached on 9 am. - 4p m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 571 272 3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Daley
Examiner
Technology Center 2100
12/16/07

MARK H. RINEHART
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100